Amendment to the Claims:

A listing of the entire set of pending claims 1-29 is submitted herewith per 37 CFR §1.121. This listing of claims 1-29 will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A transmission system for transmitting a multilevel signal (x_k) from a transmitter (10) to a receiver (20), the transmitter (10) comprising a mapper (16) for mapping an input signal (i_k) according to a signal constellation onto the multilevel signal (x_k), the receiver (20) comprising a demapper (22) for demapping the received multilevel signal (y_k) according to the signal constellation, wherein the signal constellation comprises ~~a number of~~ 2^m signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

2. (Currently Amended) The transmission system according to claim 1, wherein D_a has a ~~substantially~~ maximum value.

3. (Currently Amended) The transmission system according to claim 1, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

4. (Previously Presented) The transmission system according to claim 1, wherein the signal constellation is a 16-QAM signal constellation as depicted in any one of the FIGS. 8A to 8G or an equivalent signal constellation thereof.

5. (Previously Presented) The transmission system according to claim 1, wherein the signal constellation is a 64-QAM signal constellation as depicted in any one of the FIGS. 9A to 9C and 10 or an equivalent signal constellation thereof.

6. (Previously Presented) The transmission system according to claim 1, wherein the signal constellation is a 256-QAM signal constellation as depicted in any one of the FIGS. 11A and 11B or an equivalent signal constellation thereof.

7. (Previously Presented) The transmission system according to claim 1, wherein the signal constellation is a 8-PSK signal constellation as depicted in any one of the FIGS. 12A to 12C or an equivalent signal constellation thereof.

8. (Currently Amended) A transmitter (10) for transmitting a multilevel signal (x_k), the transmitter (10) comprising a mapper (16) for mapping an input signal (i_k) according to a signal constellation onto the multilevel signal (x_k), wherein the signal constellation comprises 2^m ~~a number of~~ signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

9. (Currently Amended) The transmitter (10) according to claim 8, wherein D_a has a ~~substantially~~ maximum value.

10. (Currently Amended) A transmitter (10) according to claim 8, wherein H_I has a ~~substantially~~ minimum value, with H_I being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

11. (Currently Amended) A receiver (20) for receiving a multilevel signal (y_k), the receiver (20) comprising a demapper (22) for demapping the multilevel signal (y_k) according to a signal constellation, wherein the signal constellation comprises ~~a number~~

~~of~~ 2^m signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

12. (Currently Amended) The receiver (20) according to claim 11, wherein D_a has a ~~substantially~~ maximum value.

13. (Currently Amended) The receiver (20) according to claim 11, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

14. (Currently Amended) A mapper (16) for mapping an input signal (i_k) according to a signal constellation onto a multilevel signal (x_k), wherein the signal constellation comprises ~~a number of~~ 2^m signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

15. (Currently Amended) The mapper (16) according to claim 14, wherein D_a has a ~~substantially~~ maximum value.

16. (Currently Amended) The mapper (16) according to claim 14, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

17. (Currently Amended) A demapper (22) for demapping a multilevel signal (y_k) according to a signal constellation, wherein the signal constellation comprises 2^m ~~a number of~~ signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal

points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

18. (Currently Amended) The demapper (22) according to claim 17, wherein D_a has a ~~substantially~~ maximum value.

19. (Currently Amended) The demapper (22) according to claim 17, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

20. (Currently Amended) A method of transmitting a multilevel signal (x_k) from a transmitter (10) to a receiver (20), the method comprising the steps of: mapping an input signal (i_k) according to a signal constellation onto the multilevel signal (x_k), transmitting the multilevel signal (x_k), receiving the multilevel signal (y_k) and demapping the multilevel signal (y_k) according to the signal constellation, wherein the signal constellation comprises ~~a number of~~ 2^m signal points with corresponding labels of m bits in lengthh, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

21. (Currently Amended) The method according to claim 20, wherein D_a has a ~~substantially~~ maximum value.

22. (Currently Amended) The method according to claim 20, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

23. (Currently Amended) A multilevel signal, the multilevel signal being the result of a mapping of an input signal (i_k) according to a signal constellation, wherein the signal

constellation comprises ~~a number of~~ 2^m signal points with corresponding labels of m bits in length, and wherein $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points.

24. (Currently Amended) The multilevel signal according to claim 23, wherein D_a has a ~~substantially~~ maximum value.

25. (Currently Amended) The multilevel signal according to claim 23, wherein H_1 has a ~~substantially~~ minimum value, with H_1 being the average Hamming distance between all pairs of labels corresponding to neighboring signal points.

26. (Previously Presented) The multilevel signal according to claim 23, wherein the signal constellation is a 16-QAM signal constellation as depicted in any one of the FIGS. 8A to 8G or an equivalent signal constellation thereof.

27. (Previously Presented) The multilevel signal according to claim 23, wherein the signal constellation is a 64-QAM signal constellation as depicted in any one of the FIGS. 9A to 9C and 10 or an equivalent signal constellation thereof.

28. (Previously Presented) The multilevel signal according to claim 23, wherein the signal constellation is a 256-QAM signal constellation as depicted in any one of the FIGS. 11A and 11B or an equivalent signal constellation thereof.

29. (Previously Presented) The multilevel signal according to claim 23, wherein the signal constellation is a 8-PSK signal constellation as depicted in any one of the FIGS. 12A to 12C or an equivalent signal constellation thereof.